

MINUTES OF DOT-AGC BRIDGE DESIGN SUBCOMMITTEE MEETING

The DOT-AGC Joint Bridge Design Subcommittee met on August 13th, 2003. Those in attendance were:

Greg Perfetti	State Bridge Design Engineer (Co-Chairman)
Berry Jenkins	Manager of Highway Heavy Division, Carolinas Branch AGC (Co-Chairman)
Allen Raynor	Assistant State Bridge Design Engineer
Ron Hancock	State Bridge Construction Engineer
Paul Lambert	Structure Design Project Engineer
Kevin Burns	R.E. Burns & Sons Co.
Richard Holshouser	Sanford Contractors
Gichuru Muchane	Structure Design Engineer

During the review of the minutes of the June 11th, 2003 meeting, the following items were discussed:

1. *Drilled Shafts*

The Association of Drilled Shaft Contractors (ADSC) stated that NCDOT's prescribed method for removal of drilled shaft casings does not give contractors the flexibility to use alternate removal methods. It was agreed that the ADSC will conduct some tests on non-production shafts for drilling and casing removal. For the purpose of documentation, Mr. Perfetti suggested that Mr. Rodger Rochelle and the Research and Development Unit be involved in the tests.

In response to a request by the ADSC, the DOT will revise the current policy and pay for up to three feet (3') of casing cutoff if the plan quantity cannot be installed.

2. *Pile Hammer Energies*

Specifications currently give an estimated Pile Hammer Energy range required to drive the piles for a given project. The Contractors stated that it is not realistic to specify the Pile Hammer energy range. The committee agreed that specifying a minimum energy would be more reasonable. *Mr. Perfetti said this decision would be communicated to Mr. Njoroge Wainaina, State Geotechnical Engineer.*

3. *Pour sequence*

Mr. Perfetti stated that we are still working on an optional pouring sequence for prestressed girder bridges. An update will be presented at the next meeting.

The Minutes of the June 11th, 2003 meeting were approved.

The following items of new business were discussed:

1. *Culvert Diversion*

Mr. Hancock presented some concerns that were raised by Mr. Don Phillips, a contractor, regarding the method of payment for diversion channels and dyking. Mr. Phillips has requested that all items related to diversion channels be paid for on a lump sum basis instead of the current per foot basis. This is similar to what is currently being done for payment for Temporary Access. The lump sum payment method will allow the contractor more flexibility to propose alternate methods for channel diversion and dyking from what is shown on the plans. It was noted that diversion channels are a Roadside Environmental pay item.

Mr. Hancock suggested that plans should note that some items are incidental to channel diversion, which would allow contractors to include channel diversion work within other pay items. He also noted that the Roadside Environmental Unit would like stricter controls on the channel diversion process.

Mr. Burns agreed to discuss the channel diversion concerns with Mr. Don Phillips and report back to the committee.

Mr. Perfetti suggested Mr. Don Lee or Mr. David Harris of the Roadside Environmental Unit, and Mr. D.R. Henderson of the Hydraulics Unit should be involved in this discussion. *Mr. Perfetti stated that Mr. Lee, Mr. Harris and Mr. Henderson should receive a copy of the minutes of this meeting and be invited to the next meeting. This item will be discussed again at the next meeting.*

2. *Pile Cut-Offs*

Mr. Hancock sought a clarification of understanding on the policy for driving piles. Specifically, when is overdriving piles permitted for additional payment? After some discussion on the current practice of the DOT inspectors, it was agreed that pile cut-off should be a non-issue and no change in policy is required.

3. *Slope Protection Elevations*

Contractors had requested that the general drawing of the structure plans show elevations at the bottom of the slope protection. At this time no action has been taken on this item. The Structure Design Unit will work on this request and present a report back to the committee at the next meeting.

4. *Other Business*

i. *PSP Warranty Period*

Mr. Burns sought clarification on the Project Special Provision (PSP) Warranty Period. Specifically, exactly when is a bridge fully accepted and turned over to the state? Mr. Hancock stated that the warranty period is 12 months from the date the project is accepted as completed. Mr. Burns stated contractors were concerned that the Bridge Maintenance Unit could use this period to obtain "free maintenance." Mr. Hancock clarified that the warranty pertained to repairs to latent defects that are not considered routine maintenance.

ii. *Finish on Pedestrian Culverts*

Mr. Hancock stated that Mr. Don Phillips suggested that the Structure Design Unit should specify a Class 1 or Class 2 surface finish on pedestrian culverts. It was noted that pedestrian culverts are high public visibility facilities that can showcase the quality of our work. *Mr. Perfetti stated that Structure Design will commit to requiring a Class 1 finish on pedestrian culverts.*

iii. *Cast-in-Place and Precast Culverts*

Mr. Hancock stated that some contractors prefer cast-in-place culverts in lieu of precast culverts that are sometimes specified on plans. Since the road closure period is usually what controls when precast culverts are specified, *it was agreed that cast-in-place culverts should be an option available to the contractor, but with no additional time allowance.*

iv. *Self-Consolidating Concrete*

Mr. Perfetti stated that DOT is open to proposals regarding use of Self-Consolidating Concrete (SCC). The Materials and Tests Unit is in the process of developing several tests for this product, such as the L-Box test for measuring flow rate. Mr. Perfetti stated that SCC will be used on a pedestrian bridge over I-440 due to a lot of detail on the substructure. He encouraged contractors to submit proposals for the use of SCC on other projects. The contractors will familiarize themselves with SCC and consider its use on future projects.

v. *Effect of Concrete Pumping on Slump*

Mr. Holshouser cited situations where concrete met the slump requirements going in to the pump but exceeded the slump range on exiting the pump although no extra water had been added, resulting in concrete rejection. He sought to know if there are any studies on the effects of pumping concrete on slump. He also inquired if the cementitious materials (fly ash, slag) and high cement content mixes contribute to this phenomenon. More generally, Mr. Holshouser questioned dependence on a slump test that may not be critical. *Mr. Hancock agreed to present these concerns at the next Ready Mix Concrete committee meeting. In addition, Mr. Hancock shall provide the Materials and Test Unit with a copy of the minutes for that meeting.*

vi. *Overhead Sign Structures*

Mr. Raynor reported that there have been a few problems with scheduling construction of sign structures. In response to some of these problems, there are two trial projects in the works. One will use "design-build" language and give more responsibility to the contractor in preparing revised plans and obtaining field information prior to fabrication of the overhead sign assemblies. The other will have the overhead sign structure designed by Structure Design. The plans will include a preliminary design of the sign structure's main members, but the contractor will be expected to hire a pre-qualified consulting firm to complete the design prior to fabrication.

vii. *Railroads*

Mr. Raynor advised the committee that Norfolk Southern was adopting a policy on erection sequence submittals similar to those required by CSX. More specifically, they will now require a crane rated at 150% of the capacity required as shown on the plans (150% rule) and require the submittal to be designed and sealed by a Professional Engineer.

viii. *Carolinas AGC*

Mr. Jenkins reported that the state funded research project on overhang falsework is in progress and an update will be presented by the researchers at the next meeting.

Mr. Jenkins also informed the committee that the Carolinas AGC website has been updated.

Mr. Burns will be rotating off the committee, and will be replaced by Mr. Chris Britton of Taylor Murphy.

ix. *Next Meeting*

The next meeting is scheduled for October 8th, 2003 in the Structure Design Unit conference Room C.